What is claimed is:

1. A medical electrical lead comprising a connector terminal, the connector terminal adapted to mate with a medical device and comprising:

an electrical contact element;

a seal zone element positioned adjacent the contact element;

an elongate conductor extending from the proximal end of the lead into the connector where the conductor couples with the contact element; and

a relatively rigid strut member completely formed from at least one electrically insulative material and comprising:

an outer surface;

an inner surface forming a longitudinal lumen extending through the strut,

a seal zone supporting protrusion extending from the outer surface and upon which the seal zone element is mounted; and

a contact supporting protrusion extending from the outer surface, longitudinally spaced apart from the seal zone supporting protrusion and upon which the contact element is mounted.

2. The lead of claim 1, wherein at least one of the seal zone and contact supporting protrusions includes a channel through which the elongated conductor passes.

3. The lead of claim 1, further comprising an adhesive backfill positioned beneath the seal zone element and the strut outer surface.

4. The lead of claim 3, wherein the strut further comprises a longitudinal channel facilitating application of the adhesive backfill from an end of the strut.

5. The lead of claim 3, wherein the seal zone element further includes an inner surface having a treatment promoting adhesion between the inner surface and the adhesive backfill.

6. The lead of claim 1, wherein an end of the strut includes a lead body-mounting surface.

7. The lead of claim 1, further comprising an insulative end cap mounted on an end of the strut, wherein a one of the contact and seal zone elements is held between the end cap and another of the contact and seal zone elements.

8. The lead of claim 7, wherein the strut end includes locking features fixedly engaging an inner surface of the end cap.

9. The lead of claim 8, wherein the locking features allow longitudinal play in a position of the engaged end cap.

10. The lead of claim 1, wherein an end of the strut includes a stop formed in the outer surface and a one of the contact and seal zone elements is held between the stop and another of the contact and seal zone elements.

11. The lead of claim 7, wherein another end of the strut includes a stop formed in the outer surface and the contact element and the seal zone element are held between the end cap and the stop.

12. The lead of claim 7, wherein the end cap includes external features adapted to engage a connector sleeve extending from the proximal end of the lead.

13. The lead of claim 1, further comprising:

a connector pin; and

a second elongate conductor extending from the lead proximal end into the connector, through the strut lumen, to couple with the connector pin;

wherein the strut lumen includes a portion engaging the connector pin.

14. The lead of claim 1, wherein the strut lumen includes a keying feature adapted to uniformly orient the strut member on an assembly pin.

15. The lead of claim 1, wherein the contact supporting protrusion includes a first part and a second part spaced longitudinally apart from the first part.

16. The lead of claim 1, wherein the electrical contact element includes an outer surface and the seal zone element includes an outer surface approximately flush with the contact element outer surface.

17. The lead of claim 1, wherein:

the electrical contact element includes a recessed outer surface extending from an end of the contact element; and

the seal zone element includes an inner surface overlapping the recessed surface of the contact element.

18. The lead of claim 1, wherein the seal zone element is formed from a polymer.

19. The lead of claim 18, wherein the polymer is selected from the group consisting of PEEK and polysulfone.

20. The lead of claim 1, wherein the seal zone element includes an outer surface free of protrusions exceeding a height of approximately 0.003 inch.

21. The lead of claim 1, wherein the seal zone element includes an outer surface free of protrusion exceeding a height of approximately 0.001 inch.

22. The lead of claim 1, wherein the seal zone element is formed from a polymer including one or more filler materials.

23. The lead of claim 22, wherein the one or more filler materials include glass fibers.

24. The lead of claim 22, wherein the polymer is selected from the group consisting of polysulfone and polyurethane.

25. The lead of claim 1, wherein the seal zone element is formed from a ceramic material.

26. The lead of claim 25, wherein the ceramic material is selected from the group consisting of alumina, sapphire and zirconia.

27. The lead of claim 1, wherein an end of the contact element is brazed to an adjacent end of the seal zone element.

28. The lead of claim 1, wherein the elongate conductor includes an insulative outer layer.

29. The lead of claim 28, wherein the insulative outer layer is formed from a fluoropolymer material.

30. The lead of claim 28, further comprising an adhesive backfill positioned between the seal zone element and the strut outer surface and wherein the elongate conductor passes through the adhesive backfill and the conductor insulative outer layer includes a surface treatment promoting adhesion to the adhesive backfill.

31. The lead of claim 1, further comprising:

one or more additional electrical contact elements and one or more additional seal zone elements positioned with the electrical contact element and the seal zone element to form an alternating array of contact elements and seal zone elements; and

one or more additional elongate conductors extending from the lead proximal end into the connector, each coupled to a one of the one or more additional contact elements;

wherein the strut further comprises:

one or more additional seal zone supporting protrusions, each extending from the strut outer surface and upon which a one of the one or more additional seal zone elements is mounted, and

one or more additional contact supporting protrusions, each extending from the strut outer surface and upon which a one of the one or more additional contact elements is mounted.

32. The lead of claim 31, wherein at least one of the seal zone supporting protrusions and at least one of the contact supporting protrusions each include a channel through which a one of the conductors passes.

33. The lead of claim 31, further comprising an adhesive backfill positioned beneath each seal zone element and the strut outer surface.

34. The lead of claim 33, wherein the strut further comprises a longitudinal channel facilitating application of the adhesive backfill from an end of the strut.

35. The lead of claim 33, wherein each seal zone element further includes an inner surface having a treatment promoting adhesion between the inner surface and the adhesive backfill.

36. The lead of claim 31, wherein an end of the strut includes a lead body-mounting surface.

37. The lead of claim 31, further comprising an insulative end cap mounted on and end of the strut, wherein a one of the contact and seal zone elements is held between the end cap and another of the contact and seal zone elements.

38. The lead of claim 37, wherein the strut end includes locking features fixedly engaging an inner surface of the end cap.

39. The lead of claim 38, wherein the locking features allow longitudinal play in a position of the engaged end cap.

40. The lead of claim 31, wherein an end of the strut includes a stop formed in the outer surface and a one of the contact and seal zone elements is held between the stop and another of the contact and seal zone elements.

41. The lead of claim 37, wherein another end of the strut includes a stop formed in the outer surface and each electrical contact element and each seal zone element is held between the stop and the end cap.

42. The lead of claim 37, wherein the end cap includes external features adapted to engage a connector sleeve extending from the lead proximal end.

43. The lead of claim 31, further comprising:

a connector pin; and

a pin elongate conductor extending from the lead proximal end into the connector, through the strut lumen, to couple with the connector pin;

wherein the strut lumen includes a portion engaging the connector pin.

44. The lead of claim 31, wherein the strut lumen includes a keying feature adapted to uniformly orient the strut member on an assembly pin.

45. The lead of claim 31, wherein each contact supporting protrusion includes a first part and a second part spaced longitudinally apart from one another.

46. The lead of claim 31, wherein each electrical contact element includes an outer surface and each seal zone element includes an outer surface approximately flush with each contact element outer surface.

47. The lead of claim 31, wherein:

each electrical contact element includes a recessed outer surface extending from at least one end of each contact element; and

each seal zone element includes an inner surface overlapping the recessed surface of an adjacent contact element.

48. The lead of claim 31, wherein one or more seal zone elements is formed from a polymer.

49. The lead of claim 48, wherein the polymer is selected from the group consisting of PEEK and polysulfone.

50. The lead of claim 31, wherein each seal zone element includes an outer surface free of protrusions exceeding a height of approximately 0.003 inch.

51. The lead of claim 31, wherein each seal zone element includes an outer surface free of protrusions exceeding a height of approximately 0.001 inch.

52. The lead of claim 31, wherein one or more seal zone elements is formed from a polymer including one or more filler materials.

53. The lead of claim 52, wherein the one or more filler materials include glass fibers.

54. The lead of claim 52, wherein the polymer is selected from the group consisting of polysulfone and polyurethane.

55. The lead of claim 31, wherein one or more seal zone elements is formed from a ceramic material.

56. The lead or adapter of claim 55, wherein the ceramic material is selected from the group consisting of alumina, sapphire and zirconia.

57. The lead or adapter of claim 31, wherein an end of each of one or more contact elements is brazed to an adjacent end of each of the one or more seal zone elements.

58. The lead of claim 31, wherein each elongate conductor includes an insulative outer layer.

59. The lead of claim 58, wherein the insulative outer layer is formed from a fluoropolymer material.

60. The lead of claim 59, further comprising an adhesive backfill positioned between each seal zone element and the strut outer surface and wherein each elongate conductor passes through the adhesive backfill and the conductor insulative outer layers include a surface treatment promoting adhesion to the adhesive backfill.

61. A method for assembling a medical electrical connector, the method comprising the steps of:

forming a relatively rigid strut member wholly from one or more electrically insulative materials;

coupling an elongate conductor to a contact element;

mounting a seal zone element on a seal zone supporting protrusion, extending from an outer surface of the strut;

mounting the contact element on a contact supporting protrusion, extending from the outer surface of the strut, such that the contact element is adjacent the seal zone element; and

routing the elongate conductor along the outer surface of the strut.

62. The method of claim 61, wherein the contact element includes an outer surface approximately flush with an outer surface of the seal zone element when the contact element and the seal zone element are mounted on the strut.

63. The method of claim 61, wherein the forming step comprises molding.

64. The method of claim 61, further comprising the step of applying a filler material between an inner surface of one or both of the seal zone element and the contact element and the outer surface of the strut.

65. The method of claim 64, wherein the applying step includes dispensing the filler material via a needle inserted along a longitudinal channel formed in the strut outer surface.

66. The method of claim 64, further comprising the step of treating the inner surface of the seal zone to promote adhesion with the filler material.

67. The method of claim 61, further comprising the step of mounting a generally tubular body on an end of the strut.

68. The method of claim 61, further comprising the step of mounting an insulative end cap on an end of the strut to hold one of the seal zone element and the contact element between the end cap and another of the seal zone element and the contact element.

69. The method of claim 67, further comprising the step of engaging a connector sleeve, extending from a proximal end of the body, over an outer surface of the strut.

70. The method of claim 61, further comprising the steps of:

routing a second elongate conductor through a lumen formed by an inner surface of the strut; and

coupling a connector pin to the second conductor.

71. The method of claim 70, further comprising the step of engaging the connector pin within a portion of the strut lumen.

72. The method of claim 61, further comprising the step of mounting the strut on an assembly pin prior to mounting a one of the seal zone element and the contact element.

73. The method of claim 72, wherein the strut further includes a keying feature engaging the assembly pin in order to uniformly orient the strut.

74. The method of claim 61, further comprising the step of brazing an end of the contact element to an adjacent end of the seal zone element.

75. A medical electrical lead, comprising a connector coupled to a proximal end of the lead, the connector adapted to mate with a medical device and comprising:

an electrical contact element including an outer surface and an edge recessed from the outer surface and extending from an end of the contact element;

an elongate conductor extending from the proximal end of the lead into the connector where the conductor couples with the contact element;

a seal zone element positioned adjacent the contact element and including an inner surface overlapping the recessed edge of the contact element and an outer surface adapted to sealingly engage with an internal sealing ring of the medical device; the outer surface free of protrusions exceeding a height of approximately 0.003 inch and approximately flush with the outer surface of the contact element; and

a relatively rigid strut member supporting the electrical contact element and the seal zone element.

76. The lead of claim 75, wherein an end of the strut includes a lead body-mounting surface.

77. The lead of claim 75, further comprising an insulative end cap mounted on an end of the strut, wherein a one of the contact and seal zone elements is held between the end cap and another of the contact and seal zone elements.

78. The lead of claim 77, wherein the strut end includes locking features fixedly engaging an inner surface of the end cap.

79. The lead of claim 75, wherein an end of the strut includes a stop and a one of the contact and seal zone elements is held between the stop and another of the contact and seal zone elements.

80. The lead of claim 77, wherein another end of the strut includes a stop and the contact element and the seal zone element are held between the end cap and the stop.

81. The lead of claim 77, wherein the end cap includes external features adapted to engage a connector sleeve extending from the proximal end of the lead.

82. The lead of claim 75, wherein the strut includes a longitudinal lumen extending therethrough and further comprising:

a connector pin; and

a second elongate conductor extending from the lead proximal end into the connector, through the strut lumen, to couple with the connector pin;

wherein the strut lumen includes a portion engaging the connector pin.

83. The lead of claim 75, wherein the seal zone element is formed from a polymer.

84. The lead of claim 83, wherein the polymer is selected from the group consisting of PEEK and polysulfone.

85. The lead of claim 75, wherein the seal zone element is formed from a polymer including one or more filler materials.

86. The lead of claim 85, wherein the one or more filler materials includes glass fibers.

87. The lead of claim 85, wherein the polymer is selected from the group consisting of polysulfone and polyurethane.

88. The lead of claim 75, wherein the seal zone element is formed from a ceramic material.

89. The lead of claim 88, wherein the ceramic material is selected from the group consisting of alumina, sapphire and zirconia.

90. The lead of claim 75, wherein an end of the contact element is brazed to an adjacent end of the seal zone element in proximity to the recessed edge of the contact element.

91. A medical electrical lead, comprising a connector coupled to a proximal end of the lead, the connector adapted to mate with a medical device and comprising:

an electrical contact element including an outer surface;

an elongate conductor extending from the proximal end of the lead into the connector where the conductor couples with the contact element;

a seal zone element positioned adjacent the contact element, including an outer surface approximately flush with the outer surface of the contact

element, and formed from a material selected from the group consisting of glass fiber-filled polymer and ceramic; and

a relatively rigid strut member supporting the contact element and the seal zone element.

92. The lead of claim 91, wherein the outer surface of the seal zone element is free of protrusions exceeding a height of approximately 0.003 inch.

93. The lead of claim 91, wherein:

the contact element further includes an edge recessed from the outer surface and extending from an end of the contact element; and

the seal zone element further includes an inner surface overlapping the recessed edge of the contact element.

94. A medical electrical connector terminal adapted to mate with a medical device and comprising:

an electrical contact element;

a seal zone element positioned adjacent the contact element; and

a relatively rigid strut member completely formed from at least one electrically insulative material and comprising:

an outer surface,

an inner surface forming a longitudinal lumen extending through the strut,

a seal zone supporting protrusion extending from the outer surface and upon which the seal zone element is mounted, and

a contact supporting protrusion extending from the outer surface, longitudinally spaced apart from the seal zone supporting protrusion and upon which the contact element is mounted.

95. The connector terminal of claim 94, wherein at least one of the seal zone and contact supporting protrusions includes a channel through which an elongated conductor passes to couple with the contact element.

96. The connector terminal of claim 94, further comprising an adhesive backfill positioned beneath the seal zone element and the strut outer surface.

97. The connector terminal of claim 96, wherein the strut further comprises a longitudinal channel facilitating application of the adhesive backfill from an end of the strut.

98. The connector terminal of claim 96, wherein the seal zone element further includes an inner surface having a treatment promoting adhesion between the inner surface and the adhesive backfill.

99. The connector terminal of claim 94, further comprising an insulative end cap mounted on an end of the strut, wherein a one of the contact and seal zone elements is held between the end cap and another of the contact and seal zone elements.

100. The connector terminal of claim 94, wherein an end of the strut includes a stop formed in the outer surface and a one of the contact and seal zone elements is held between the stop and another of the contact and seal zone elements.

101. The connector terminal of claim 99, wherein another end of the strut includes a stop formed in the outer surface and the contact element and the seal zone element are held between the end cap and the stop.

102. The connector terminal of claim 94, wherein the electrical contact element includes an outer surface and the seal zone element includes an outer surface approximately flush with the contact element outer surface.

103. The connector terminal of claim 94, wherein:

the electrical contact element includes a recessed outer surface extending from an end of the contact element; and

the seal zone element includes an inner surface overlapping the recessed surface of the contact element.

104. The connector terminal of claim 94, wherein the seal zone element is formed of a polymer.

105. The connector terminal of claim 104, wherein the polymer is selected from the group consisting of PEEK and polysulfone.

106. The connector terminal of claim 94, wherein the seal zone element includes an outer surface free of protrusions exceeding a height of approximately 0.003 inch.

107. The connector terminal of claim 94, wherein the seal zone element includes an outer surface free of protrusion exceeding a height of approximately 0.001 inch.

108. The connector terminal of claim 94, wherein the seal zone element is formed from a polymer including one or more filler materials.

109. The connector terminal of claim 108, wherein the one or more filler materials include glass fibers.

110. The connector terminal of claim 108, wherein the polymer is selected from the group consisting of polysulfone and polyurethane.

111. The connector terminal of claim 94, wherein the seal zone element is formed from a ceramic material.

112. The connector terminal of claim 111, wherein the ceramic material is selected from the group consisting of alumina, sapphire and zirconia.

113. The lead of claim 94, wherein an end of the contact element is brazed to an adjacent end of the seal zone element.